

# Ted's News

## December 2017

### [Another Deck Collapse](#) [How to Confirm the Correct Treatment Has Been Achieved](#) [The Importance of Grading Timber](#) [Lessons From a 30 Year Old Mangrove Boardwalk](#)

#### Another Deck Collapse

Just as I was about to hit send on this newsletter, the news came through about another deck collapse with yet again more fatalities and injuries. It is too early to find out why but already there are calls for annual inspections of the decks of rental properties. My report last month on a presentation by Geoff Stringer of Hyne which asks, "Should decks be load limited" is very pertinent. [Here is the link.](#) In my book [Timber Joints](#) I discuss decks which are usually built to the lowest price, with joints that are stressed from the weather and have no expiry date. It is a recipe for disaster if things continue the way they are. Fortunately, doing it well is not hard either. It is all in my books.

#### [How to Confirm the Correct Treatment Has Been Achieved](#)

This segment was mainly written by Tim Evans of IVS as a guest contributor with some tweaking from me. Not a paid advertisement



The A and B sample identified with the charge number.

The wisdom shown by Cairns Regional Council to include product testing as well as confirmation grading in the specification for the replacement decking at the esplanade has set a precedent that should be widely followed. This is necessary to ensure that the market receives correctly treated timber that will

always be fit for purpose. This particular application will see the timber exposed to

wave action so a higher level of protection than is normally required was needed. Readers will recall that I have been critical of the state of timber preservation coming from some suppliers, particularly with pine. Here is some articles if you missed them.

[July 2017 - a reminder about pine](#)

[Sept 2017 - What is needed in a wood encouragement policy](#)

My old friend, Tim Evans, established IVS (Independent Verification Services) in Australia, five years ago but, not surprisingly, has had difficulty getting traction with Third Party Quality Assurance, with the “excuse” that it costs too much. In reality though, it will cost cents per M3 once in place. The lack of any compulsion, vis regulation/law is the game stopper. It is a given, and has been well proven by his and my own practical experience with the operation of timber preservation plants, where regular product testing, coupled with charge sheet reconciliation, not only insures compliance with AS 1604, but insures that the unnecessary cost of overtreatment is avoided. In the past, NSW & QLD had the TMA & TUMA which provided some incentive, but with the repeal of these acts it is partly cowboy country which is bad for wood.

The samples shown above that were taken in Cairns, along with others from the four charges involved., have been dispatched and logged into IVS's portal. The portal provides:

- Client’s ability to register own samples for analysis to AS 1604.
- Secure data protection with individual Log On and Password.
- Data stored and backed up permanently.
- Clients with multiple sites & plants can vary levels of access on “need to know”.
- Provides chain of custody.
- Purchase order & billing are linked with the portal.

Tim advised me that timber product testing has shown steady growth, and will in the next year or so be expected to show more growth with the long overdue NCBP Legislation in Queensland. This legislation is being watched with interest by other states. Tim understands that a Manager, Non-conforming Building Products Industry Quality, has been appointed. and a team of Inspectors with wide ranging powers is being appointed. If you want to know more, Tim can be contacted as follows **m 0417 726 741** **p 1800 812 498** **e [tim.evans@ivsltd.com.au](mailto:tim.evans@ivsltd.com.au)**

## The Importance of Grading Timber

I am here pictured in Cairns inspecting timber produced to the [Deckwood](#) specification. I was impressed with the level of conformance. The mill did say that they had exceptional logs but at the end of the day it is about culling out non-conforming material at the mill before the timber is delivered. The last batch I graded to the same specification had a 50% non-conformance including untreated lyctus susceptible sapwood!



In the absence of industry wide checks I recommend that timber in public structures be graded independently for conformance. I can do this, it can be organised through Timber Queensland and for our NSW readers contact Richard Forrester at Timber Inspection Ph 0429 646112.



Consider this decking which overall had about a 75% non-conformance. The mill didn't give a hoot (I could have used a much stronger word), The builder didn't give that much stronger word, and the certifier had absolutely no idea what he/she was looking at. There is no point putting effort into design if you allow this! Responsible suppliers deserve and need your protection and if you don't, what will you have

left? As Tim said above, cowboy country.



## Lessons from a 30-year-old mangrove boardwalk



The [Jack Barnes Bi-centennial Mangrove Boardwalk](#) is situated adjacent to the Cairns Airport and was constructed 30 years ago as a work for the dole project. It is still in service and, having walked it, I believe there are lessons to be learnt from it.

### **Subframe.**

The piles are bamboo about 6m long which were cut off about a half a metre below the surface and a length of sewer pipe was spliced in and filled with concrete. In places they have sunk but, overall, it is functioning as at most it only has to support a handful of people. As far as supporting the normal design load of 5 kPA, 4.5 kN it would fail. The local footy club is no longer allowed to run on it as the boardwalk developed a "bow wave" action. Compare the piles to those at the Nudgee Beach

boardwalk, our first big boardwalk [link to project gallery](#) where the piles were 2x6 m spliced H5 pine with a physical barrier against marine attack.. A special small tracked pile driver was used which worked off ply matting. When the tide came in it raised itself above the tide so it did not have to disturb the environment getting back to dry ground. Unfortunately that machine is no longer in service.

### **Timber**

The timber is in remarkably good condition and has many years service left despite already being 30 years old. This is largely because the top surface of most boards are clear of defect. Those with defect have degraded but they are a very small minority. You cannot get this grade of timber now if you ask for F14 or F17 and that is why [Deckwood](#) was developed. You need to purchase my book on [Grading Hardwood](#) to understand why a very tight specification is required for decking.

The timber is believed to be forest red gum an In Ground Durability 1 timber. I have had mixed results with this timber. It used to be one of the permitted species for Deckwood because what we sourced from the Lockyer Valley performed very well. When we closed our mill and I started to get it from further afield there were a number of claims, mainly for "shelling out: which is a delamination of the growth rings. When I went back to the mills involved one said, "We wondered why you were using it, we could have told you it was unsuitable." The timber size is 100x50 which has a width to thickness ratio of 2 to 1 and I have observed that the chunkier sizes are less prone to shelling out. No idea why.

Despite the species obvious success here, I would advise against using it for decking as this variability works against the certainty you need when doing a design. It cost me thousands. Its use in joists is an issue now too. I have in the past used forest red gum for boardwalk joists. A good piece went F17 and as it was durability Class 1 in ground, it should have been good. Unfortunately, its strength has been re-classified in AS2082-2007. Earlier in AS2082-2000 Forest red gum in Structural Grade 2 went F14 and Structural Grade 1, the highest grade, went F17. Now both grades only meet F14 unseasoned (AS2082 Table A3) and when dry F17 (Table A1) Spotted gum in the highest grade would be F22 and F34 respectively.

### **Fasteners**

The fasteners and the brackets are all galvanised and this deck is fastened with galvanised flat head nails. The areas closest to the creek have experienced the most corrosion but, being 30 years old these would have been Australia made bolts which perform much better than the low cost imported bolts. See [June 16 newsletter - Galvanised bolts more variable than timber](#). I recommend stainless steel. A detailed argument for this is given in my book [Timber Joints](#).

The heads of the nails showed no corrosion and had not worked out which surprised me in this very demanding application. Flat head nails were available with a twisted

shank which I imagine were used. Now nails are imported so I expect similar issues as with the bolts.

### **Maintenance**

When first constructed the council would regularly blow the deck to remove litter between the deck gaps and the joist but, I am led to believe, this has not be done for a long time. A very few boards and kerbs have been replaced. Overall the costs have been very low.

### **Future**

The foundations that are sinking in places do need some attention, probably more for aesthetics than safety but, once attended to, provided the traffic remains light the superstructure will give many years of satisfactory service.

### [Need a Timber Consultant or Expert Witness?](#)

I have over 40 years' experience in the industry and can assist you with any of your timber needs.

**Design** - I can provide detailed technical drawings and advice.

**Inspection** – I can assess timber products on their performance, fitness for purpose or cause of failure. I also examine whether best practice was used in design and construction.

**Reports** - I have authored many books on timber and can prepare a report to meet your needs.



**Edgar Stubbersfield**

Mail: [edgarstubbersfield@gmail.com](mailto:edgarstubbersfield@gmail.com)

Web: [www.deckwood.com.au](http://www.deckwood.com.au)

Phone: 0414 770 261